

# The Advisor

A York County Newsletter for Professional Horticulturists and Workers in the Green Industry - July/Aug 2001



## Jim's Notes



This newsletter brings to you two great articles dealing with subject matter that I get asked about all of the time: horticultural oils, and does reducing your pesticide use really work?

The articles will prove interesting and challenging for you. Also for those managers that are interested in alternate sources of quality water, you might plan to attend the educational program listed in the newsletter. This season has brought us plenty of diseases and insects. Some new ones for me and our lab. I encourage you to bring a sample of those that you are not positive of to the Extension Office in order to get a positive lab response of the organism. Fighting these pathogens with the correct control measure is important for your time, money and the environment. Enjoy your summer.

## Calendar of Events

- July 11 VFGA Strategic Planning Meeting - All Greenhouse Operators Invited  
VCE Pavilion, Virginia State University, Petersburg  
Followed by cook-out at Walthall Berry Farm, Walthall  
VFGA is offering Van transportation. Mail to: [jlatime@vt.edu](mailto:jlatime@vt.edu)
- July 27- Perennial Plant Association Annual Meeting, Crystal City, VA  
Aug 4 <http://www.perennialplant.org>
- Aug 7 HRSD Irrigation Field Day, Virginia Initiative Plant, Norfolk. See Article on page 2
- Sep 12 Hampton Roads Agricultural Research and Extension Field Day  
1444 Diamond Springs Rd. Virginia Beach. To register call 363-3900  
more information in next newsletter.

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## Use of Pesticides at Williamsburg Foundation reduced by 70%!!

Joel Bunn has managed the pesticide program for Williamsburg Foundation approximately two years. He had previous experience with the Commonwealth of Virginia and USDA. He earned his Master's degree from William & Mary. He conducts pest management certification classes locally for commercial and home gardeners and has given speeches and classes at many locations throughout Virginia. When his success came to our attention at the York County Extension Office, we thought it beneficial to interview him concerning the notable reduction of pesticide usage that was reported. Highlights of that interview follow:



**Bill Stansberry:** We understand that through your efforts the pesticide application at CW has been reduced as much as 70%.

**Joel Bunn:** Actually that was in the first year of the program. However, presently we are experiencing a 55%-60% level of reduction.

**Bill:** How did you accomplish this notable reduction?

**Joel:** Education, change of attitudes, and improved monitoring.

**Bill:** Was there any one plant or any one part of the program that accounted for a large percentage of this reduction?

**Joel:** Yes, tree spraying probably accounted for a good portion. We've eliminated this part of the program altogether except, of course, where measures are indicated. We don't do cover spray.



**Bill:** What differences have you noticed in the general horticulture from the decreased use of pes-

ticides?

**Joel:** We have noted an increase in beneficial insects. Actually we have introduced beneficial insects into our greenhouses and as these plants go out to the general public, the good bugs go with them.

**Bill:** Do you have any advice that you would like to give to other professionals or home gardeners about reducing the use of pesticides?

**Joel:** Yes, especially to the home gardener - I'd say get your face in the plant, don't spray until you can identify the problem. We no longer assume we have to spray certain plants with certain pesticides every season on a regular basis. Plants can withstand some damage, so some spraying programs are not always necessary. I've also noticed that pre-mixed fungicides are now available in hand spray bottles which will enable homeowners to spot spray where appropriate..

*Joel Bunn's experience and the results of his efforts are significant and show that commercial growers, home gardeners and the general public can benefit from informed decreased use of pesticides.*

## Recycled Wastewater

**Is alternative irrigation in Virginia's future?**

Come to the **Irrigating with Reclaimed Wastewater Field Day** at Hampton Roads Sanitation District Virginia Initiative Plant, 4201 Powhatan Avenue, Norfolk, Va. on Tuesday, August 7. See the demonstrations of four turfgrass plots constructed and maintained to meet U.S. Golf Association standards. The demonstration will show different turfs maintained with potable water versus reclaimed waste water. Results of identical experiments using Ornamental plots will be demonstrated. For more information, registration forms etc. contact Tammi Baldwin at (757) 440-2500, Fax (757) 683-2300



## Confused about Horticultural Oils, Summer Oils and Dormant Oils?

**Read the following excerpts from James Baker, Extension Entomologist with NCSU - - -**

Professional and amateur horticulturists are often confused about the use of petroleum oils for pest control on ornamental plants. Such oils are called summer oils, dormant oils, and horticultural oils. **Horticultural oils and summer oils are synonymous terms.** In practice, selecting the proper oil for insect and mite control on ornamental plants is much simpler than it seems. The only formulations for sale in garden shops, nurseries and hardware stores that come in quart sizes or less are horticultural or summer oils. The **confusion arises** in unfortunate wording on the labels of many oils that often have **directions for winter or dormant applications first and in fairly large type. This leads the buyer to believe the oil is a dormant oil when it is actually a horticultural oil that can be applied during the dormant season also.**

There are three factors that distinguish summer oils from dormant oils. These factors determine the effects of the oil sprays on the plant to be treated. Some oils are so toxic to plants that they are actually used as herbicides (Stoddard solvent, diesel oil).

**Factor 1: Unsulfonated Residue.** Oils have **saturated and unsaturated hydrocarbons.** Unsaturated hydrocarbons are more unstable than saturated hydrocarbons and, when they are sprayed onto plants, they tend to form substances which are toxic to plants. When oil is mixed with strong sulfuric acid, the saturated hydrocarbons react with the acid and sink to the bottom of the mixture as "sulfonated residues". That represents the portion of the oil which would burn leaves

and tender stems. The portion left is the "unsulfonated residue" composed of saturated hydrocarbons that are much less likely to burn leaves and tender stems. Dormant oils have 50 to 90% unsulfonated residues (50 to 100% unsaturated hydrocarbons), and they tend to damage green plants and tender stems. Summer oils have 92 to 96% unsulfonated residues (8 to 4% unsaturated hydrocarbons) and they are much safer to use on leaves and stems.

**Factor 2: Density.** Heavier oils are more toxic to insects than are lighter oils, perhaps because they tend to evaporate slower than lighter oils. Consequently, they are in contact with the target insect for a longer time. However, heavier oils are also more toxic to plants, probably for the same reason. The density of horticultural oils must be balanced by the manufacturers for maximum efficacy and minimal plant injury.

**Factor 3: Viscosity.** The "body" or "thickness" of oil is measured in arbitrary terms by timing its flow through a standard opening. In general, the faster an oil passes through, the safer it is to use on ornamental plants. However, oils from various parts of the world may have differing viscosities for the same relative plant safety. Nonetheless, viscosity is one of the standards used to characterize insecticidal petroleum oils.

Summer oils are not applied full strength for insect control. They are usually mixed with water at a rate of 1 to 4 parts of oil and 99 to 96 parts of water depending upon the manufacturer's directions for safe use found on the label. There are two types of formulations of summer oils: miscible oils and concentration emulsions. Miscible oils are 95 to 99% oils that form an emulsion immediately when mixed with water. Concentration emulsions are about 80% oil plus emulsifiers and water. Concentration emulsions are thick and resemble mayonnaise or marshmallow topping in appearance.

Summer oils are relatively cheap, but they are





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also less toxic to insects than many synthetic pesticides and consequently are used at higher rates. Summer oils are used at 1 to 4% of the mixture, whereas some synthetic insecticides are used at a rate of 0.03% of the mixture. An advantage to summer oils is that insects have not developed resistance to oils. Summer oils also have good "spreading" properties and can be used at lower concentrations (2 to 4 teaspoons per gallon) with other synthetic insecticides to enhance the coverage of a pesticide treatment. Because summer oils are safe and easy to mix and because the oils impart a sheen to treated plants, they are popular with homeowners and landscapers for use in controlling ornamental plant pests. Use 3 tablespoons per gallon as a leaf polish. Summer oils have been found to be particularly effective for armored scale control (tea scale, euonymus scale, etc.) and are especially useful in that regard.

Here are trade names and percentages of various summer oils: Superior Spray Oil (98%, 98.9%), Spray Oil (98%), Scalicide (98%), Summer SpraOil (98%), Superior Oil (98.7a5%), Volck Oil Spray (97%), Volck Supreme Oil Spray (98%), Unico Spray Oil (98%), Oil-I-Cide (80%).



These names are given to aid the consumer in recognizing summer oils, not as recommendation of any particular product.

## Nursery Industry News



**Bendiocarb** is being discontinued through the Food Quality Protection Act, according to Bob Froelich, marketing manager of

Scotts Co. Plant Protection Products. Bendiocarb is the common name of Scotts' Closure 76WP and several other insecticide brands used to control a broad range of pests including black vine weevil, aphids, thrips, scale, mealybugs, bronze birch borer, bagworms and Japanese beetle. Scotts will not be able to sell the product after Dec. 31, but

distributors have a period to sell the pesticide while inventory remains.

Darrel Apps, owner of Woodside Nursery in Bridgeton, N.J., and introducer of the Happily Ever Appster series of daylilies, is seriously concerned about the spread of the **newly discovered disease daylily rust**. In Florida, the disease has been discovered not just at nurseries but in landscape settings, which will make control more difficult, he said.

Since many daylilies in Florida are evergreen rather than herbaceous, this adds to control problems.



**USDA-ARS** used a transmission electron microscope to peer into a **lesion nematode's** reproductive system, looking for a way to combat the pest. *Pratylenchus penetrans* causes extensive damage to ornamentals, potatoes and

corn. It ranks among the worst parasites of crop plants along with its cousins, the soybean cyst and root-knot nematodes. Burton Y. Endo, William P. Wergin and Ulrich Zunke were able to map the structures of the pest's reproductive systems for the first time. Endo said the researchers are looking for weak links that may be manipulated and exploited to develop alternative controls.